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Alabbody

المجلة العراقية لبحوث السوق وحماية المستهلك

HERBEL THERAPY PRACTICE FOR LOCALL LIVESTOCK

Huda Hameed K. Alabbody
Lecturer, Market Research and Consumer Protection Center, University of Baghdad, Baghdad, Iraq. huda@bccru.uobaghdad.edu.iq

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ABSTRACT

The herbs have a huge role in development of pharmacology besides the role of veterinary medicine in development of human medicine The study aimed to evaluate the therapeutic efficacy of pomegranate peel and leaves of both thuja and tobacco in 5 cows, 15 sheep and 15 goats were brought to veterinary clinics on the outskirts of Baghdad suffering from health problems in the skin, upper respiratory tract and digestive system. Cases were treated topically or orally as a powder, aqueous solution, or ointment. The results showed that 66% of cases were cured. The cure rate was related to the severity of the infection or lesion, course of treatment, routes of administration and herbal formula. Also, the results did not show any side effects of the herbal during the treatment period. Pour- on using of tobacco leaf infusion for lice-infected goats gave a better result than in sheep. The thuja and peels of pomegranate have proven to healing as an ointment for wounds, sores and blisters. Also, the aqueous solution or powder of thuja and peel of pomegranate have proven effective in reducing symptoms in the digestive system and upper respiratory disorders. Both ointments of thuja and pomegranate gave acceptable results for the treatment of warts (papilloma). Therefore, the farmer can use these herbs in emergencies. Recommendation is conducting more clinical veterinary studies on pomegranate, thuja, and tobacco leaves and their medicinal propriety. Thus, the field of veterinary medicine is the best field for reviving biopharmaceutical research and comparative medicine.

Key words: Herbal therapy, Livestock, Pomegranate, Thuja, Tobacco.

استخدام الاعشاب في العلاجات البيطرية لمواشي المربين المحليين

هدى حميد كاظم العبودي
مدرس، مركز بحوث السوق وحماية المستهلك، جامعة بغداد، بغداد، العراق huda@bccru.uobaghdad.edu.iq

الخلاصة

ان للأعشاب دور كبير في تطور علم الأدوية إلى جانب دورها في تطوير الطب البشري والبيطري هدفت الدراسة إلى تقييم الكفاءة العلاجية لقشر الرمان وأوراق كل من الثويا والتبغ لـ 5 أبقار و 15 رأس غنم و 15 ماعز، جلبوا الى االعيادات البيطرية في اطراف مدينة بغداد وكانت تعاني من مشاكل صحية في الجلد والجهاز التنفسي العلوي والجهاز الهضمي. عولجت الحالات بمطحون الاعشاب اما أعطاءا موضعيا على جسم الحيوان أو فمويا، وبصيغة اما مسحوق اومحلول مائي اومرهم. وأظهرت النتائج شفاء 66٪ من الحالات، كانت نسبة الشفاء مرتبطة بخطورة الاذى او الإصابة المتعرض لها الحيوان، مدة العلاج، طرق الإعطاء وصيغة المستحضر العشبي. كما لم تظهر النتائج أي آثار جانبية للعلاج بالأعشاب في فترة العلاج. أعطى استخدام أوراق التبغ المائي عند سكبها على الماعز المصابة بالقمل نتيجة أفضل مما في الأغنام. أثبت نباتي العفص والرمان قابلية بالشفاء كمرهم للجروح والقروح والبثور. أيضًا أظهر المحلول المائي أو مسحوق ورق العفص او قشور الرمان كفاءة في تقليل الاعراض المرضية في الجهاز الهضمي واضطرابات الجهاز التنفسي العلوي. أعطى كل من مرهم العفص وقشر الرمان نتائج مقبولة للشفاء من الثآليل (الورم الحليمي). لذلك يمكن

للمزارع استخدام هذه النباتات في حالات الطوارئ. يوصى بإجراء المزيد من الدراسات البيطرية السريرية حول نباتات الرمان والثويا والتبغ نظرًا لميزتها الطبية، بالتالي فإن مجال الطب البيطري هو أفضل مجال لإحياء البحوث الصيدلانية الحيوية والطب المقارن.

الكلمات المفتاحية: التداوي بالأعشاب، الثروة الحيوانية، الرمان، الثويا، التبغ.

INTRODUCTION

The herbs have a hug role in development of pharmacology besides the role of veterinary medicine in development of human medicine. Many studies done about the mechanism and action of the remedies to confirm the dependence or exclusion. The comparative medicine studies pushed the medical knowledges rapidly due to the capacity of the search field (**Pound *et al.*, 2004**). Studies of scientific applications find natural alternative compounds as alkaloid in Punica granatum peels that inhibit the growth of several pathogenic organisms which cause dangers and harms for human health and animals (**Karam, 2020**). Increasing the use of medical plants due to the resistance of pathogens to traditional medicines like antibiotic and antimicrobial led to grow the search of alternatives treatment. The using of herbs in emergency cases may be successful and effectiveness in alternative medicine for both human and animal (**Sah *et al.*, 2017; Alabbody 2022**).

Several plants can be used to reduce the aggravation of pathogenic organisms. One study found the effect of adding green tea as an antimicrobial agent to edible films prepared from whey protein isolate on packaging Iraqi soft cheese (**Chalob & Abdul-Rahman 2018**). Other studies testify to the role of thuja and pomegranate peels as a herbal remedies for the treatment of numerous diseases and they had astringent properties by healing wounds and ulcers or may improve and support oral health include oral cavity gums, tonsils and teeth. Also one study found pomegranate peels exhibited strong antimicrobial effect and high antioxidant activity, in addition it enhanced liver and kidney functions. In the otherwise studies documented that tobacco, used on a small scale as a natural organic pesticide for hundreds of years, is getting new scientific attention as a potential mass-produced alternative to traditional commercial pesticides. (**Booker *et al.*, 2010; Ismail *et al.*, 2012; Chinsembu 2016**)

This study aimed to evaluate the therapeutic activity of three plants: pomegranate peel, thuja leaves and tobacco leaves (PTT) on some farm pathological cases (5 cows, 15 sheep and 15 goats).

MATERIAL AND METHODS

A group of farm animals, consist from 5 cows, 15 sheep and 15 goats, were suffered from pathological disorders had a clinical signs that necessitated treatment as shown in Table 1.

The pomegranate peels, thuja leaves and tobacco leaves PTT were naturally dried under the sun's rays as shown in Figure 1.

In this study, each illness or symptom was dealt with a specific treatment program, used one from PTT herbs in one formula (aqueous, powder or ointment) in variety courses according to the severity of the injury, infection, infestation and the methods of administration (**British Herbal Pharmacopoeia, 1983; Rozich *et al.*, 2004**). In this study the PTT herbs was used as the following forms:

- Powder: every PTT herbs were ground separately by the house electric grinder (Mini Electric Stainless Steel Multifunctional Electric Grinder, Model Number QT-38, Brand Name OEM, origin China)

- Aqueous solution: A10 mg crashed herb substance was added to one ml of a tap water and left about 6-24 hours before use (**Eliana *et al.*, 2012**).
- Ointments: 5 g of crashed herb (powder substance) was mixed with 100 g of petroleum jelly 5% (w\w) (**Hayouniae *et al.*, 2011**)

54% of the cases were treated with aqueous soaking and 46% of the cases were treated with powder of PTT herbs by row powder or as ointment formula. The study longs 6 months from the 1st of March to the 1st of September 2022.

All the data obtained from the study were entered into the SPSS statistical program, version 22, to find out the effect of the variables on each other at a significant value $P \leq 0.05$.

Figure (1): A- Thuja leaves, B-The pomegranate fruit peels and C- Tobacco leaves were naturally dried under the sun's rays

RESULTS AND DISCUSSION

The pathological signs of the animals showed 26% of the cases were infested with external parasites such as lice and ticks, and 18% of the cases had wounds, bruises and injuries in some parts of the body, and the least 6% of the cases had warts. Also Orf infection cases, respiratory disorder like nasal discharge and coughing, gastrointestinal disorder like diarrhea and mange infestation were diagnosed approximately 8.5% each one. In addition to other public clinical sings like fever, tiredness (fatigue) and enlarged the lymph nodes near sides of infection. The courses of treatment were varied, 43% of cases were treated once daily for 3 days, followed by 40% of cases were treated just one time and the least once a week for 3 weeks. In this study the highest method of administration was a local pouring on the skin 34%, followed by the use of a local application of ointment 29%, dusting on the lesion by powder 14%, inhalation and oral syrup 8.5% each one… Table 1.

Table (1): The pathological signs, courses of treatment and methods of administration of the PTT herbs.

Variables		No.	(%)	Variable		No.	(%)
Type of animals	Bovine	5	14	Primary shape of remedy	Aquatic solution	19	54
	Ovine	15	43		Ground herbs (powder)	16	46
	Caprine	15	43	Total		35	100
Total		35	100	Period of treatments	Just one time	12	34
Age	Mature	17	49		Once a day for 3 days	15	43
	immature	18	51		Once a day for 5 days	4	11
Total		35	100		Once a day for more than 5 days	2	6
Clinical signs	Orff	3	8.5		Once a week for 3 weeks	2	6
	Wound and skin rapture	5	14	Total		35	100
	Warts	2	6	Route of administration			
	Upper respiratory inflammation	3	8.5		Locally as ointment	10	29
	Diarrhea	3	8.3		Locally as aqueous pour on	14	40
	Fever & tiredness	2	6		Locally as powder dusting	5	14
	Lice or tikes infestation	9	26		Inhalation	3	8.5
	Mites infestation	3	8.5		Orally as syrup	3	8.5
Total		35	100	Total		35	100
Type of herbs	Pomegranate peel	9	26	Result of treatment	Cured cases	23	66
	Thuja leaves	14	40		Non cured cases	12	34
	Tobacco leaves	12	34				
Total		35	100	Total		35	100

Table (2): The relationship of animal species with type of herb, the formula, the method and course of treatment

Variables		Types of animal					X2 test
		Bovine	Ovine	Caprine	No.	(%)	P value, df. Asymp. Sig.
Types of herb	Pomegranate peel	2	3	4	9	28	3.259a , 4, 0.515
	Thuja leaves	2	6	5	13	37	
	Tobacco leaves	1	6	6	13	37	
Total		5	15	15	35	100	
Formula	Aqueous soaked	4	7	8	19	54	1.689a, 2, 0.430
	Ground (ointment &dust)	1	8	7	16	46	
Total		5	15	15	35	100	
Course of treatments	Just one time	2	6	4	12	34	17.811a, 8, 0.023
	Once a day for 3 days	3	5	7	15	43	
	Once a day for 5 days	\	0	2	2	6	
	Once a day for more than 5 days	\	4	0	4	11	
	Once a week for 3	\	0	2	2	6	

	weeks						
Total		5	15	15	35	100	
Route of administration	Locally as ointment	\	5	5	10	29	7.622a, 12, 0.814
	Locally as pour on	3	6	5	14	40	
	Locally as powder	0	2	3	5	14	
	Inhalation	1	1	1	3	8.5	
	Orally as syrup	1	1	1	3	8.5	
Total		5	15	15	35	100	

(Table, 2) shows the relationship of animal species with types of herbs formula, courses and routes of administration. There was no significant value between the species of animal with the type and formula of plant, but there was a significant value between the species of the animal with the course of treatment in ($P \leq 0.05$).

Table (3): The relationship between the clinical signs with both the formula and the course of therapy.

Variables / Clinical signs		Orf	Wound and skin rapture	Warts	Upper respiratory inflammation	Diarrhea	Metritis	Blister on the skin	Lice or tikes infestation	Mites infestation			P value, df. Asymp. Sig.
The primary shape of remedy	Aquatic solution	\	1	\	3	3	2	3	5	2	19	54	15.300a, 8, 0.044
	Ground herbs (powder & ointment)	3	4	2	\	\	\	2	4	1	81	46	
Total		3	5	2	3	3	2	5	9	3	35	100	
Course of treatment	Just one time	\	2	\	3	2	2	2	4	\	15	43	41.553a, 32, 0.120
	Once a day for 3 days	3	2	\	\	1	\	3	1	2	12	34	
	Once a day for 5 days	\	\	1	\	\	\	\	0	1	2	6	
	Once a day for more than 5 days	\	1	1	\	\	\	\	2	\	4	11	
	Once a week for 3 weeks	\	\	\	\	\	\	\	2	\	2	6	
Total		3	5	2	3	3	2	5	9	3	35	100	

(Table. 3) shows the relationship between the clinical signs with both of the formula and the course of therapy. There was significant value between the clinical signs with the formula of the herbs in ($P \leq 0.05$).

The animal in farms are exposed to many pathological agents cause disease to the animal and economic losses to the breeder. This condition can threat the life of the animal or at least lead to decrease animal production, therefore the breeder must treat the problem rapidly before it's worsen **(Samad, 2019)**. Sometimes it's difficult to obtain the medicine in farm, but

herbs mostly available and may be used in pathological and emergency cases like sudden injury, the ectoparasites infestation or any systemic symptom such as coughing, sneezing, diarrhea etc. **(Hart, 2005)**. In this study, the method of treatment differed according to the severity, the type of problem, the site of lesion or and the weather, for example, washing goat and sheep by soaked tobacco to treat lice infestation in summer, in the other hand fumigation and inhalation by soaked of thuja were used to animals with respiratory diseases in winter, these dealing with the study cases may give accurate management and provide financial benefit served the labor **(Ruiz & Montoto 2018; Rénier *et al.* 2018; Dutta *et al.* 2020).**

Orf disease, which affects sheep and goats, characterize by appearance of pustular lesions on the muzzle and lips caused by Paramyxovirus.in this study, Orf disease was treated with pomegranate peels or with thuja ointment, both herbs gave visible healing characters after three days of treatment. These two herbs were used in several studies to treat skin and epithelium tissue lesions as blisters, vesicles; ulcers, erosion and warts in animals. The resistant bacteria and the widespread global virus pandemics necessitate the need to addition preventative and therapeutic options to conventional drugs **(Howell & Souza 2013)**. Some studies published about antioxidant, anti-carcinogenic, anti-inflammatory properties, and anti-ultraviolet radiation-induced skin damage of pomegranate peels. Some studies were concluded that the Nano-form of P. granatum peel extracts were rich in phenolic compounds, had high antioxidant activity and a therapeutic effect on *Cryptosporidium parvum* in experimentally infected mice, the infected mice was significantly enhanced towards the healthy normal status by red pomegranate peel extract administration. For this, pomegranate peels should be used in the Nano-form in the daily human and animal diet to give protective effects against pathological agents and improve health status **(Jurenka, 2008 &Aboelsoued *et al.*, 2019)**. Also thuja, has been used to treat bronchial catarrh, enuresis, cystitis, psoriasis, uterine carcinomas, amenorrhea and rheumatism. Today, thuja is mainly used for acute and chronic infections of the upper respiratory tract, and as an adjuvant to antibiotics in severe bacterial infections such as bronchitis, angina, pharyngitis, otitis and sinusitis. The immune-pharmacological potential of thuja has been investigated in vivo test models due to its ability to increase the proliferation rates of spleen cells in mice. In vitro the fraction from *Thuja eoccidental isherbaled* to an increased secretion of the cytokines IL-1, IL-6 and tumor necrosis factor (TNF) in the cell culture supernatant **(Naser *et al.*, 2005; Sunila *et al.*, 2011)**.

The study appeared tobacco leaves was so effective against Sarcoptic Mange as ointment formula in both sheep and goat treatments, Also tobacco leaves showed more effective on goats than on sheep in terms of infestation with lice when used as aqueous pour on formula, It may be due to the nature of the light leathery hair in goats per contra the sheep covered with dense wool. The nicotine in the components of the tobacco herb reaches 5% of dried herb weight, this substance may affect the natural grip of the hair of adult lice and lead to paralysis of the muscles and weaken the grip without killing them. Therefore, lice can be removed more easily by combing the pet animals, the adult lice can be removed during bathing and sweeping. Otherwise many studies have shown the importance of tobacco in control and eliminating the pests that can infect field crops. Some studies, mentioned the components of tobacco in eliminating or expelling external parasites on animals, it is possible to transform the path of the tobacco plant from a harmful herb to a benefit herb. **(Burkhart & Burkhart, 2000).**

The study appeared that 66% of the cases treated with PTT herbs were completely cured. This is a moderate result, It may be due to the fact of substance which used for treatment was raw herb, where the active ingredient is as minimum amount with a group of other substances that may interacted the action of the active substance**(Ahmad *et al.*, 2006)**.

CONCLUSION

The study verify the important of herbs use in emergency and critical cases. The authors, experts, veterinarians and academics must increase the knowledge and awareness of breeders about the rank and necessity of treating animals with herbs in order to improve methods of develop livestock and benefit the nature elements of the environment (human, animal and plant).

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